REMARKS

Claims 1-30 are pending in this application. Claims 1-30 stand rejected. By this Amendment, claims 1, 2, 12, 17, 23, and 26-29 have been amended. Support for the amendments may be found at page 11, line 8 to page 12, line 7; page 20, line 7 to page 21, line 11; and page 28, lines 7 to 22. In light of the amendments and remarks set forth below, Applicants respectfully submit that each of the pending claims is in immediate condition for allowance.

Claims 1-10, 12, 17, 23, and 26-29 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over review of Scientific Instruments ("Chu") in view of JP 2001 212253 ("Yasushi"). Applicants respectfully traverse this rejection.

The Office Action fails to establish a *prima facie* case of obviousness at least because Chu in view of Yasushi, even if properly combinable, do not teach or suggest every element of independent claims 1, 12, 17, 23 and 26-28. To establish a *prima facie* case of obviousness, the prior art reference (or references when combined) must teach or suggest all the claim limitations. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

Claim 1, as amended, recites, *inter alia*, "said plurality of second scatters including a second scatterer for smaller irradiation field size caused to be positioned in said passage region at a first position in the direction of travel of said charged particle beam and used when said collimator is adapted for a relatively small first irradiation field and another second scatterer for larger irradiation field size caused to be positioned in said passage region at a second position upstream of said first position in the direction of travel of said charged particle beam and used when said collimator is adapted for a larger second irradiation field than said first irradiation field, said second scatterer for smaller irradiation

field size caused to be positioned in the passage region at said first position having a thickness different from that of said another second scatterer for larger irradiation field caused to be positioned in the passage region at said second position so as to provide smaller scattering strength of said charged particle beam in a direction perpendicular to the direction of travel of said charged particle beam than said another second scatterer for larger irradiation field size." Chu and Yasushi, alone or in combination, do not teach or suggest this limitation.

Applicants respectfully submit that claim 1 refers to the usage of two types of second scatterers, including, for example, "a second scatterer for smaller irradiation field size" and "another second scatterer for larger irradiation field size" and the relationship between the two types of second scatterers and the collimator has been clarified, for example, as "used when said collimator is adapted for a relatively small first irradiation field" and "used when said collimator is adapted for a larger second irradiation field than said first irradiation field."

In particle beam irradiation equipment utilizing a double scattering method, generally, there are two requirements to be taken into consideration:

1.) The dose uniformity deteriorates as the distance between the first and second scatterers decreases (page 3, lines 26-28). This means that it is desirable to shorten the distance between the first and second scatterers to assure a satisfactory dose uniformity

2). Arranging the scatterers at positions as near as possible to the most upstream side is effective in decreasing the thickness of each of the first and second scatterers to

reduce the range loss (page 3, lines 11-15). This means that it is desirable to increase the distance between the first and second scatterers to assure a satisfactory range loss.

In a case where the irradiation field size is relatively large, the influence on deterioration of the dose uniformity caused when the distance between the first and second scatterers is shortened is relatively small. This means that the second scatterer can be located at a position upstream more than the case where the irradiation filed size is relatively small, and when the second scatterer can be reduced and the range loss can be reduced. (page 33, line 27 to page 34, line 13.)

In a case where the irradiation filed size is relatively small, the influence on increase in the range loss caused when the distance between the first and second scatterers is increased is relatively small. This means that the second scatterer can be located at a position downstream more than the case where the irradiation filed size is relatively large, and when the second scatterer is so located, high dose uniformity is assured. (page 34, lines 14-26).

Chu and Yasushi, on the other hand, do not teach or suggest changing the position of the second scatterer and the thickness of the second scatterer depending on the size of the irradiation field.

Since Chu and Yasushi do not teach or suggest all of the limitations of claim 1, claim 1 is not obvious over the cited references. Independent claims 2, 12, 17, 23, 26, 27, and 28 contain limitations similar to those contained in claim 1 and are allowable for similar reasons. Claims 19 and 20 depend from claim 1 and are patentable at least for the reasons mentioned above. Claims 3-6 depend from claim 2 and are patentable at least for the

reasons mentioned above. Claims 13-16 depend from claim 12 and are patentable at least for the reasons mentioned above. Claims 18-22 depend from claim 17 and are patentable at least for the reasons mentioned above. Claims 24 and 25 depend from claim 23 and are patentable at least for the reasons mentioned above. Claims 7-11, 19 and 20 depend from claim 26 and are patentable at least for the reasons mentioned above. Claims 29 and 30 depend from claim 28 and are patentable at least for the reasons mentioned above.

In view of the above, Applicants believe the pending application is in condition for allowance.

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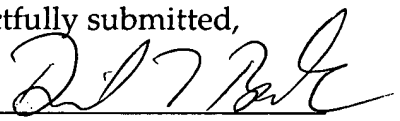
Respectfully submitted,

By 

Mark J. Thronson
Registration No.: 33,082
David T. Beck
Registration No.: 54,985
DICKSTEIN SHAPIRO LLP
1825 Eye Street, NW
Washington, DC 20006-5403
(202) 420-2200
Attorneys for Applicants